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MAR 13 2007

**Fax****Attention:** USPTO  
Mail Stop Appeal Brief-Patents**From:** Paul R. Katterle**Examiner:** Terrence Ronique Willoughby  
Art Unit 2836**Fax number:** 571-273-8300**Fax number:** 440-585-7578**No. pages incl. this cover sheet:** 18**Telephone number:** 440-585-7968**Date:** March 13, 2007**MESSAGE:****Re:** U.S. Patent Application Serial No. 10/705,645  
Entitled: ADAPTIVE PROTECTION FOR RECLOSER CONTROL

Attached, please find an Appeal Brief (14 pages), drawings (2 pages) and a copy of the front page of the Appeal Brief (1 page) for fee payment purposes.

Respectfully submitted,

A handwritten signature in dark ink, appearing to read "Paul R. Katterle".  
Paul R. Katterle

I hereby certify that this correspondence is being facsimile transmitted to the U.S. Patent and Trademark Office at (571) 273-8300 on the date indicated below.

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CENTRAL FAX CENTER****MAR 13 2007****PATENT****IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant: Jeffrey L. McElray, Sr. et al.  
Assignee: ABB Technology AG  
Serial No.: 10/705,645 Art Unit: 2836  
Filed: November 10, 2003 Confirmation No.: 6138  
Title: ADAPTIVE PROTECTION FOR RECLOSER CONTROL  
Examiner: Terrence Ronique Willoughby Docket No.: B000291

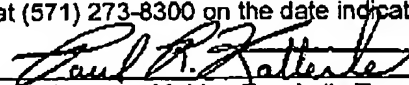
**APPEAL BRIEF  
WITH PETITION FOR EXTENSION OF TIME**

Mail Stop Appeal Brief-Patents  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

Dear Sir:

In response to a final Office action dated June 12, 2006 and pursuant to the Notice of Appeal filed on November 13, 2006, Applicant submits the following Appeal Brief. The date for filing the Appeal Brief expired on January 13, 2007. Accordingly, Applicant hereby requests and petitions under 37 C.F.R. §1.136(a) that the period for filing the Appeal Brief be extended for two months to March 13, 2007. Please charge the \$450 two-month extension of time fee and the \$500 fee required under 37 C.F.R. §1.17(c) for filing the Appeal Brief to our Deposit Account No. 050877.

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**I. Real Party in Interest**

The real party in interest is ABB Technology AG

**II. Related Appeals and Interferences**

None.

**III. Status of Claims**

Claims 1-3, 6, 8-10, 13, 15-17, 19 and 36-43 are currently pending in the application. Claims 1-3, 6, 8-10, 13, 15-17, 19 and 36-43 have been finally rejected and form the basis for this appeal. Appendix VIII includes a clean copy of appealed claims 1-3, 6, 8-10, 13, 15-17, 19 and 36-43.

**IV. Status of Amendments**

No Amendments were filed after the final Office action dated June 12, 2006 from which this appeal is taken.

**V. Summary of Claimed Subject Matter**

For the convenience of the Board, copies of Figs. 1 and 4 from the published subject application are enclosed herewith.

Independent claim 1 is directed to a method for controlling a recloser for an electrical power line. An exemplary embodiment of the claimed method is schematically shown in Fig. 4 and is described in the specification from page 11, line 6 through page 12, line 5. In a step 100, a protection setting group is determined. The protection setting group has at least one associated feature that comprises one of time of day, day of week, and month of year (See page 11, lines 13-18). In a step 110, a present condition of the at least one associated feature is determined. A behavior function for the recloser based on the protection setting group and the present condition is determined in a step 120. In a step 130, the recloser is adaptively set to function in accordance with the

behavior function.

Independent claim 8 is directed to a recloser control system for an electrical power line. An exemplary embodiment of the claimed recloser control system is schematically shown in Fig. 1 and described in the specification from page 8, line 3 through page 8, line 29. The operation of this embodiment is schematically shown in Fig. 4 and described in the specification from page 11, line 6 through page 12, line 5. The recloser control system includes a recloser 10, memory 30 and recloser controller 20. The memory 30 contains a protection setting group having at least one behavior function with an associated feature. The associated feature includes one of time of day, day of week, and month of year (See page 11, lines 13-18). The recloser controller 20 is coupled to the recloser 10 and the memory 30 for adaptively setting the recloser 10 to function in accordance with one of the at least one behavior functions in the protection setting group.

Independent claim 15 is directed to a computer-readable medium having computer-executable instructions for performing a series of steps, which are schematically shown in Fig. 4 and are described in the specification from page 11, line 6 through page 12, line 5. In a step 100, a protection setting group for a recloser 10 operating on an electrical power line is determined. The protection setting group has at least one associated feature that comprises one of time of day, day of week, and month of year (See page 11, lines 13-18). In a step 110, a present condition of the at least one associated feature is determined. A behavior function for the recloser 10 based on the protection setting group and the present condition is determined in a step 120. In a step 130, the recloser 10 is adaptively set to function in accordance with the behavior function.

Independent claim 36 is directed to a recloser control system for an electrical power line. An exemplary embodiment of the claimed recloser control system is schematically shown in Fig. 1 and described in the specification from page 8, line 3 through page 8, line 29. The operation of this embodiment is schematically shown in Fig. 4 and described in the specification from page 11, line 6 through page 12, line 5. The recloser control system includes a recloser

10 and a microcomputer 20 operable to control the recloser 10. Memory 30 stores control instructions, which, when executed by the microcomputer 20 controls the operation of the recloser 10 in accordance with a control scheme selected from a plurality of different control schemes. The selection of the control scheme is based on one or more variables selected from the group consisting of time of day, day of week, month of year and load current (See page 11, lines 13-18).

#### **VI. Grounds of Rejection to be Reviewed on Appeal**

The grounds of rejection to be reviewed on appeal are whether claims 1-3, 6, 8-10, 13, 15-17, 19 and 36-43 are unpatentable under 35 U.S.C. §103(a) as being obvious over U.S. Patent No. 5,303,112 to Zulaski et al. (hereinafter the "Zulaski Patent") in view of U.S. Patent No. 6,005,757 to Shvach et al. (hereinafter the "Shvach Patent").

#### **VII. Argument**

Applicant submits that claims 1-3, 6, 8-10, 13, 15-17, 19 and 36-43 are not obvious under 35 U.S.C. §103(a) in light of the Zulaski Patent in view of the Shvach Patent because the Zulaski Patent and the Shvach Patent individually and in combination fail to show or suggest all of the limitations of the claims, as is required by established case law. See *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). As set forth in the Manual of Patent Examining Procedure (MPEP), Section 2143, there are three requirements for establishing a prima facie case of obviousness, namely: (1.) there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings; (2.) there must be a reasonable expectation of success; and (3.) the prior art reference (or references when combined) must teach or suggest all the claim limitations. Since the Zulaski Patent and the Shvach Patent fail to teach or suggest all of the claims limitations of independent claims 1, 8, 15 and 36 and, thus, dependent claims 2, 3, 6, 9, 10, 13, 16, 17, 19 and 37-43,

Applicant submits that the Examiner has failed to establish a prima facie case of obviousness.

On the most fundamental level, the Zulaski Patent fails to show controlling a recloser. The Zulaski Patent discloses *detecting the operation* of a recloser, but not controlling the operation of the recloser. As set forth in the first sentence of its abstract, the Zulaski Patent is directed to a method and apparatus for *detecting the operation of* protective devices in a power distribution system. This detection information may be used to locate faults and to isolate and sectionalize the faults to restore the system. As is shown in Fig. 2 of the Zulaski Patent, the apparatus includes a control unit 11 comprising a fault detection unit 10 and a controller 15. The fault detection unit 10 *receives* signals from a sensing arrangement 14 (column 3, lines 47-48), which is located downstream of a recloser 22. The fault detection unit 10 provides status information to the controller 15, which is connected to a master station 30. In response to commands from the master station 30, the controller 15 opens and closes a switch 12 (column 4, lines 6-8). Neither the controller 15, nor the fault detection unit 10 controls the recloser 22. The control unit 11 only controls the switch 12 and merely *receives* signals from the sensing arrangement 14, which can provide an indication of the status of the recloser 22. *Thus, contrary to the Examiner's assertion, the control unit 11 does not control the recloser 22.* Accordingly, the Zulaski Patent fails to show or suggest:

"A method for controlling a recloser", as is recited in independent claim 1;  
and

"A recloser control system", as is recited in independent claims 8 and 36.

Since the Zulaski Patent fails to disclose even the most fundamental aspect of the claimed invention, it is clear that the Zulaski Patent fails to show or suggest most of the limitations of independent claims 1, 8, 15 and 36. For example, the Zulaski Patent fails to show the following limitations of independent claims 1, 8 and 15 relating to the adaptive setting of the recloser:

"adaptively setting the recloser to function in accordance with the behavior function", as recited in independent claims 1 and 15; and

"adaptively setting the recloser to function in accordance with one of the at least one behavior functions in the protection setting group", as recited in independent claim 8.

The Examiner cites column 10, lines 58-68 and column 11, lines 1-5 of the Zulaski Patent as showing the foregoing limitations. The cited passage in the Zulaski Patent, however, has nothing to do with setting the recloser 22. Instead, the cited passage concerns fault **detection** methods *performed by the fault detection unit 10*. And, once again, the fault detection unit 10 has nothing to do with controlling the recloser 22. Thus, neither the cited passage, nor any other provision of the Zulaski Patent shows or suggests the limitations of independent claims 1, 8 and 15 relating to the adaptive setting of the recloser recited above.

Another example of the deficiency of the Zulaski Patent is its failure to show or suggest:

"memory storing control instructions, which, when executed by the microcomputer, controls the operation of the recloser in accordance with a control scheme selected from a plurality of different control schemes", as recited in independent claim 36.

The Examiner cites column 3, lines 3-8; Fault Locations F2-F3 in Table I in column 4; and the Loss of Voltage (144, 150) in Table III in column 9 of the the Zulaski Patent as showing the foregoing limitation. None of these provisions, however, show what the Examiner attributes to them. Column 3, lines 3-8 describe a fourth output of the fault detection unit that is *indicative* of protective device operation. Table I in column 4 merely shows the *status indications* provided by the fault detection units FDU1, FDU2, FDU3 (see column 4, lines 27-29). Table III in column 4 merely lists the various outputs of the fault detection units *indicating* fault conditions of the power distribution network. All of the

foregoing provisions cited by the Examiner describe fault indications made by fault detection units. The provisions do not describe control routines, let alone control routines for controlling the operation of a recloser. Thus, the cited passages of the Zulaski Patent fail to show or suggest the limitation of independent claim 36 recited above.

#### The Shvach Patent

The Examiner admits that the Zulaski Patent fails to show or suggest using time or date (i.e., "time of day, day of week, month of year") to determine the operation of a recloser, as set forth in independent claims 1, 8, 15 and 36. For example, independent claim 36 recites (with emphasis added): "the selection of the control scheme [for the recloser] is based on one or more variables selected from the group consisting of **time of day, day of week, month of year** and load current". The Examiner, however, cites the Shvach Patent as showing this feature of the claimed invention. Applicant submits that the Shvach Patent fails to show or suggest this feature of the claimed invention and fails to cure the other deficiencies of the Zulaski Patent.

The Shvach Patent discloses a master circuit breaker (e.g. 11) having a trip unit (e.g. 10) and an apprentice circuit breaker (e.g. 13) having a trip unit. The trip unit of the apprentice circuit breaker (e.g. 13) is interconnected with the trip unit (e.g. 10) of the master circuit breaker (e.g. 11) so that the apprentice circuit breaker (e.g. 13) acquires at least one predetermined setting from the master circuit breaker (e.g. 11). The Shvach Patent does not disclose a recloser, let alone a method or apparatus for controlling a recloser. Thus, it is clear that the Shvach Patent fails to cure the deficiencies of the Zulaski Patent detailed above.

The Examiner cites column 12, lines 58-64 of the Shvach Patent as showing the use of time and date to control tripping. The cited provision of the Shvach Patent, however, merely discloses transferring the date and time (e.g., day, month, year, hours, minutes, seconds) from the master circuit breaker 11 to the apprentice circuit breaker 13 and storing this time and date data in the EEPROM of microprocessors 28, 30 of the apprentice circuit breaker 13. The Shvach Patent does not disclose doing anything else with the time and date data.



Thus, the Shvach Patent fails to show or suggest using time or date to determine the operation of a circuit breaker, let alone a recloser.

For at least the reasons set forth above, the Zulaksi Patent and the Shvach Patent, individually and in combination fail to even remotely approximate independent claims 1, 8, 15 and 36 and claims 2, 3, 6, 9, 10, 13, 16, 17, 19 and 37-43, which depend therefrom. Accordingly, Applicant submits that the Examiner has failed to establish a prima facie case of obviousness and that claims 1-3, 6, 8-10, 13, 15-17, 19 and 36-43 are not obvious under 35 U.S.C. §103(a) in light of the Zulaski Patent in view of the Shvach Patent.

Conclusion

Favorable consideration of this appeal, and reversal of the rejection of claims 1-3, 6, 8-10, 13, 15-17, 19 and 36-43 is respectfully requested.

Respectfully submitted,

ABB Technology AG

By:

  
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March 13, 2007

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## **VIII. Claims Appendix**

### **Copy of Claims on Appeal**

1. A method for controlling a recloser for an electrical power line, comprising:
  - determining a protection setting group, the protection setting group having at least one associated feature, wherein the at least one associated feature comprises one of time of day, day of week, and month of year;
  - determining a present condition of the at least one associated feature;
  - determining a behavior function for the recloser based on the protection setting group and the present condition; and
  - adaptively setting the recloser to function in accordance with the behavior function.
2. The method according to claim 1, further comprising continuously monitoring the present condition and changing the behavior function responsive to the monitoring.
3. The method according to claim 2, wherein the monitoring the present condition comprises monitoring at predetermined intervals.
6. The method according to claim 1, wherein the behavior function comprises one of fuse saving mode and fuse clearing mode.
8. A recloser control system for an electrical power line, comprising:
  - a recloser;
  - a memory comprising a protection setting group having at least one behavior function with an associated feature, wherein the associated feature comprises one of time of day, day of week, and month of year; and

a recloser controller coupled to the recloser and the memory for adaptively setting the recloser to function in accordance with one of the at least one behavior functions in the protection setting group.

9. The recloser control system according to claim 8, wherein the recloser controller monitors a present condition of each associated feature of each behavior function in the protection setting group, and determines the behavior function based on the present condition.

10. The recloser control system according to claim 8, wherein the recloser controller comprises the memory.

13. The recloser control system according to claim 8, wherein the at least one behavior function comprises one of fuse saving mode and fuse clearing mode.

15. A computer-readable medium having computer-executable instructions for performing steps comprising:

determining a protection setting group for a recloser operating on an electrical power line, the protection setting group having at least one associated feature, wherein the at least one associated feature comprises one of time of day, day of week, and month of year;

determining a present condition of the at least one associated feature;

determining a behavior function for the recloser based on the protection setting group and the present condition; and

adaptively setting the recloser to function in accordance with the behavior function.

16. The computer-readable medium according to claim 15, further comprising computer-executable instructions for continuously monitoring the

present condition and changing the behavior function responsive to the monitoring.

17. The computer-readable medium according to claim 16, wherein monitoring the present condition comprises monitoring at predetermined intervals.

19. The computer-readable medium according to claim 15, wherein the behavior function comprises one of fuse saving mode and fuse clearing mode.

36. A recloser control system for an electrical power line, the recloser control system comprising:

a recloser;

a microcomputer operable to control the recloser; and

memory storing control instructions, which, when executed by the microcomputer, controls the operation of the recloser in accordance with a control scheme selected from a plurality of different control schemes, wherein the selection of the control scheme is based on one or more variables selected from the group consisting of time of day, day of week, month of year and load current.

37. The recloser control system of claim 36, wherein a first one of the control schemes is a fuse saving control scheme and a second one of the control schemes is a fuse clearing control scheme, and wherein the one or more variables comprises time of day and day of week.

38. The recloser control system of claim 37, wherein when the time of day is between 8:00 AM and 5:00 PM and the day of week is one of Monday, Tuesday, Wednesday, Thursday and Friday, then the second one of the control schemes is selected.

39. The recloser control system of claim 36, wherein a first one of the control schemes causes the recloser to operate in a single phase mode and a second one of the control schemes causes the recloser to operate in a three-phase mode, and wherein the one or more variables comprises month of year.

40. The recloser control system of claim 39, wherein when the month of year is one of April, May, June, July, August and September, then the second one of the control schemes is selected.

41. The recloser control system of claim 36, wherein a first one of the control schemes is a fuse saving control scheme and a second one of the control schemes is a fuse clearing control scheme, and wherein the one or more variables comprises load current.

42. The recloser control system of claim 36, wherein a first one of the control schemes causes the recloser to operate in a single phase mode and a second one of the control schemes causes the recloser to operate in a three-phase mode, and wherein the one or more variables comprises load current.

43. The recloser control system of claim 36, wherein the recloser system further comprises a controller that includes the microcomputer and the memory.

**IX. Evidence Appendix**

-None-

**X. Related Proceedings Appendix**

-None-

Patent Application Publication

Jun. 3, 2004 Sheet 1 of 3

US 2004/0105204 A1

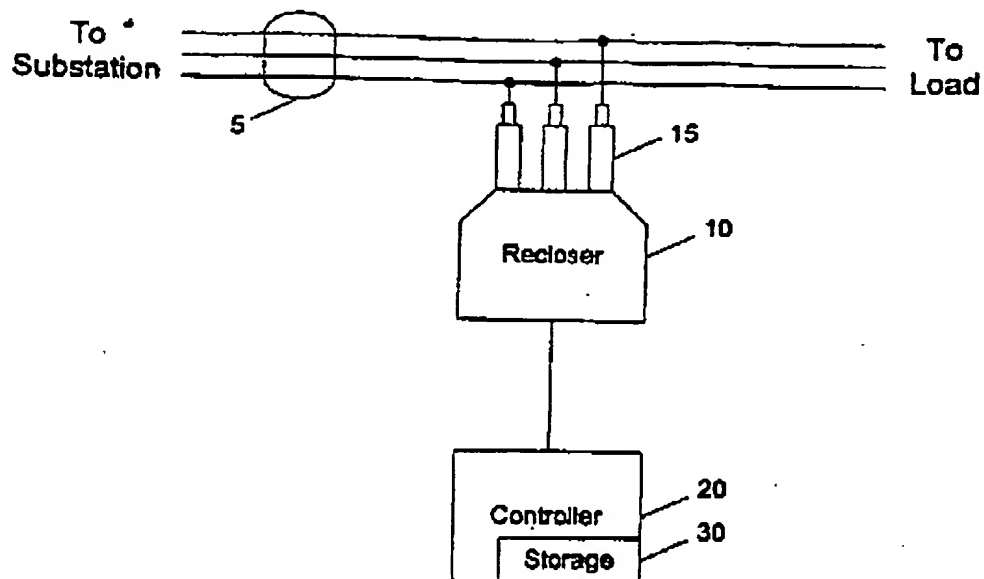


FIG. 1



Patent Application Publication

Jun. 3, 2004 Sheet 3 of 3

US 2004/0105204 A1

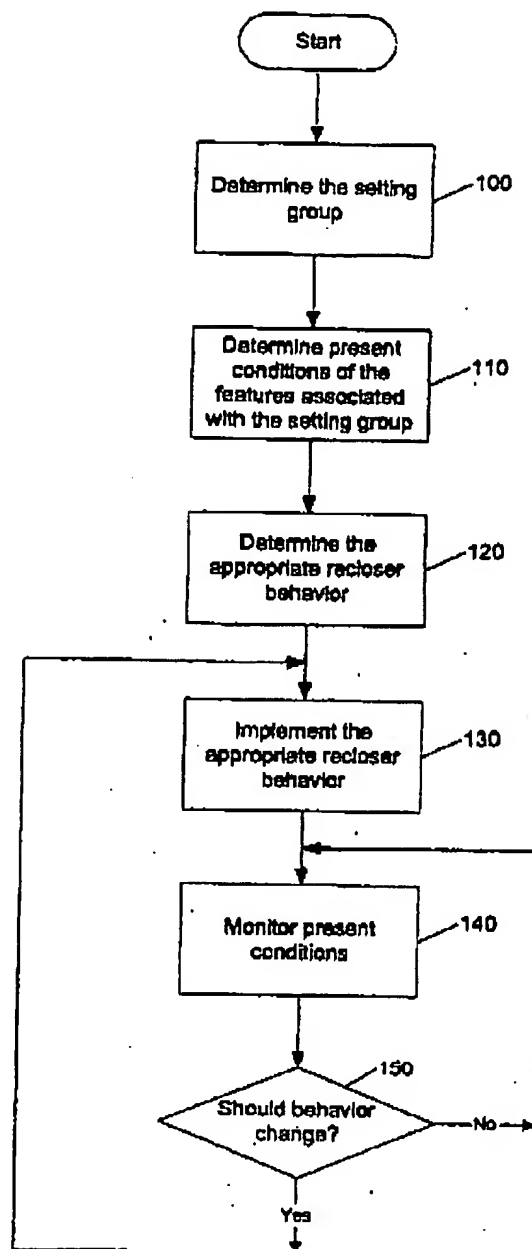


FIG. 4